

28. The backup and retrieval system of claim 27, comprising means for communicatively coupling to at least one other backup cell, whereby the first backup cell is capable of being controlled by a management component in the other backup cell.

29. The backup and retrieval system of claim 27, comprising means for controlling the backup device in a first backup cell from the management component in another of the plurality of backup cells.

Cont  
30. The backup and retrieval system of claim 27, comprising means for controlling the backup device in a first backup cell from the management component in another of the plurality of backup cells via the management component in the first backup cell.

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REMARKS

In the Office Action, the Examiner rejects pending claims 1-19 under 35 U.S.C. 103(a) as being obvious in view of U.S. Patent No. 5,005,122 to Griffin et al. For at least the reasons set forth below, the applicants traverse these rejections of the pending claims and respectfully request reconsideration. In addition, the applicants add claims 20-30 to more fully claim aspects of the present invention.

Griffin discusses a system for providing management services in a computer network, including backup and software distribution. This patent discusses a computer network comprising a plurality of nodes wherein each node comprises a computer and nodes are either client nodes or server nodes. (Col. 2, lines 34-42) A server node provides a number of services to client nodes over a communications link. (Col. 3, lines 21-22) At least one server node in the network is a management server node, and other server nodes comprise network service nodes for performing network

services. (Col. 2, lines 42-45) A single server node may comprise any combination of a management server node, a backup server node, a software distribution node, and/or another server node. (Col. 4, lines 10-15)

To initiate a network service, the management server node transmits a message to the network service node to enable it to perform an operation and the network service node responds with a status message after the operation has been completed.

(Col. 2, lines 45-49) In connection with backup, the management server node transmits a message to the backup server node to enable it to perform the required backup operation.

(Col. 2, lines 54-57) Typically, each backup server will be assigned to perform backup operations for selected client nodes. (Col. 6, lines 36-38) When a client node requires a backup operation, it transmits a backup request message to its assigned management server node. (Col. 6, lines 38-40) The management server node transmits a backup enabling message to the backup server node which is responsible for backup in connection with the client node requiring backup. (Col. 6, lines 43-46)

The backup server node may either perform the backup operation itself or it may be a master backup server node which enables a slave backup server node, which is actually responsible for performing the backup operation in connection with the client node, to perform the backup. (Col. 6, lines 46-52) There may be backup server nodes which operate in response to messages from slave backup server nodes, thus the backup server nodes may form a hierarchy in connection with the performance of backup operations. (Col. 6, lines 61-67)

The system permits expansion of the network through the addition of client nodes while maintaining the management, backup, and software distribution

services provided by management server nodes, backup server nodes, and software distribution server nodes. (Col. 7, lines 32-37) Thus, if client nodes are added to the system, the level of services may be maintained by adding additional slave management server nodes and backup server nodes and software distribution nodes, either under the direct control of a management server node or a master backup server node or a master software distribution server node as needed. (Col. 7, lines 37-47)

Absent from Griffin is any teaching or suggestion of a backup management component present on any network device other than a server node. The present application describes methods and systems for performing backups in a network computing system. Specifically referring to independent claims 1, 4, 10, 16, 20, 23, and 27, the present invention comprises a plurality of backup cells with a management component communicatively coupled to a backup device in at least one of the cells. According to the specification, a management component is configured to reside on and execute on a network device and is not limited to any particular kind of network device. The management component is not required to reside on and execute on a server, but may reside on a client or any other network device within a backup cell without limitation.

Griffin, however, is limited to a specific architecture. Indeed, as the Examiner noted, Griffin does not disclose the use of backup cells, but instead only discusses client/server backup arrangements. Thus, while Griffin describes a number of modes in which management server nodes and backup server nodes may operate, each mode of this rigid server/client architecture limits implementation of management components and backup components to server nodes. (Col. 7, lines 32-37)

The present invention, by contrast, permits any group of network devices to comprise a backup cell, without limitation, and does not limit where the management component may reside. Turning to claim 1, for example, a backup cell comprises a backup device for the group and a management component communicatively coupled to it. The management component can reside on and execute on any other network device that is a part of the backup cell which could include clients or other non-server devices. This flexible architecture permits an easy hierarchy of cells as opposed to the rigid constraints of Griffin.

In Griffin, only server nodes provide the services to client nodes and they are presented as distinct elements of Griffin's system. (Col. 3, lines 21-22) Indeed, Griffin specifically distinguishes server nodes from client nodes in terms of backup services indicating that as more client nodes are added to the network, additional server nodes may also be added to maintain the level of services. (Col. 7, lines 37-47)

Requiring the additional server nodes to service new clients on the network is prohibitively expensive. The present method and systems maintain the level of services to network clients through the addition of management components on any network device including the new clients themselves. Additional backup capabilities may be easily and advantageously added simply by installing an additional management component on an existing network device. The need for additional servers is thus eliminated and represents a substantial improvement over Griffin.

Further, to the extent Griffin discusses a number of modes in which a hierarchy of nodes performs backup operations, each such mode also limits nodal hierarchy to servers nodes. (Col. 6, lines 65-68) By contrast, the present invention in

Claim 1 describes a plurality of backup cells each adaptable to be controlled by a management component in another of the plurality of backup cells. Unlike Griffin, the present invention is not limited to a server-based hierarchy since a management component runs on a network device and is not limited to any particular kind of network device. Accordingly, the present invention allows for a hierarchical relationship between all network devices in the system and not just between servers.

Furthermore, Griffin limits control of backup operations to a server node comprising a computer and thus a rigid network configuration. (Col. 6, lines 65-68) By contrast, the present invention is extremely flexible in terms network configurability. Turning to Claim 23, for example, the management component, the client component, and the backup component can reside on and execute on different network devices in the backup cell. In addition, these components can reside on any network device and are not limited to implementation on computers much less only to servers. Network administrators are thus able to more easily configure their networks which represents an improvement over Griffin.

In addition, for the reasons set forth above, Griffin does not disclose the elements in claim 4, including a first backup cell comprising at least one backup device and a first manager component, and a second backup cell including a second manager component controlling the backup of data to the at least one backup device. Further, as set forth above, Griffin does not disclose the elements in claim 10, including at least one backup device executing backup functions for the data contained on a first group of network devices; a first management component controlling the backup of the data to the at least one backup device, and a second manager component controlling the backup of

data to the at least one backup device. In addition, for the reasons set forth above, Griffin does not disclose the elements in claim 16, including at least one backup device executing backup functions for the data contained on a first group of network devices, a first network device controlling the backup of data contained on the first group of network devices to the at least one backup device, and a second network device controlling the backup of data to the at least one backup device. In addition, for the reasons set forth above, Griffin does not disclose the elements in claim 20, including a plurality of backup cells, a backup device executing backup of data stored on at least one of a plurality of network devices, a management component, residing on and configured to execute on any network device, and means for communicatively coupling to at least one other backup cell whereby the first backup cell is capable of being controlled by a management component in the other backup cell. Further, for the reasons set forth above, Griffin does not disclose the elements of claim 27, including a plurality of backup cells, a backup device executing backup of data stored on at least one of a plurality of network devices, and a management component, residing on and configured to execute on any network device.

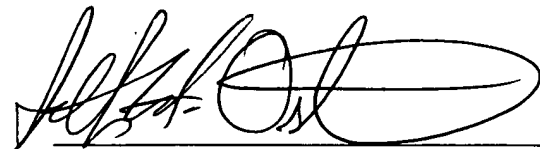
The dependent claims of the present application contain additional features that further substantially distinguish the invention of the present application over Griffin and the other prior art of record. However, given the applicants' position on the patentability of the independent claims, it is not deemed necessary at this point to delineate such distinctions.

For at least all of the above reasons, Applicants respectfully request that the Examiner withdraw all rejections, and allowance of all the pending claims is respectfully

solicited. To expedite prosecution of this application to allowance, the examiner is invited to call the applicants' undersigned representative to discuss any issues relating to this application.

Respectfully submitted,

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